SPECSHEET

Control® 29AV-1

Professional Series – Premium Indoor/Outdoor Monitor Speaker

Key Features:

- Extremely smooth, flat frequency response with extended bandwidth
- 110° x 85° HF coverage, rotatable horn
- 110 Watt transformer for 70V or 100V lines, with 8Ω thru
- SonicGuard™ overload protection
- 200 mm (8") Kevlar cone woofer, 25 mm (1") titanium diaphragm compression driver
- Includes InvisiBall™ mounting hardware, plus ten 6 mm attachment points for suspension and optional U-bracket
- Sealed input panel cover and screw-down input terminals





Description:

The Control 29AV-1 provides improved voicing for extremely flat, high-fidelity performance, extended bandwidth and well-controlled defined coverage from a compact loudspeaker.

The rotatable high-frequency horn allows use of the speaker in either vertical or horizontal orientation. Consistent coverage ensures excellent sound character throughout the listening area. Moderate magnetic shielding allows use of the speaker as close as 230 mm (9) to video monitors.

The top-quality line distribution transformer, designed for minimal insertion loss and reduced saturation, allows use of either 70V or 100V distributed speaker lines. In bypass position, the 8Ω impedance allows use of multiple speakers on a loudspeaker line.

The included InvisiBall mounting method is simple to install, aims easily and provides a high degree of theft deterrence. InvisiBall allows horizontal rotation of up to 41° off-axis and vertical rotation of up to 36° (horn end inward) or 23° (woofer end inward). Attachment points for the optional MTC-29UB U-bracket allows for compact installation.

Weather resistance has been maximized. The woofer's cone is made of kevlar, surround is pure butyl rubber, and the driver basket is rear loaded to minimize direct exposure. The compression driver's diaphragm is pure titanium. The grille is thermoset composite coated and comes with foam to minimize incursion of water. Nickel/zinc rust-resistant terminals ensure a secure input connection. An MTC-PC2 sealed-entrance cover is included to further protect the speaker's terminals.

JBL's exclusive SonicGuard overload protection is virtually inaudible to the listener, ensuring reliability while providing full-fidelity sound.

Available in black or white (-WH). The cabinet will accept a variety of paints to match any décor.

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Specifications:

System	
Frequency Range (-10 dB)[1]	37 Hz –18 kHz
Frequency Response (± 3 dB)[1]	43 Hz – 15 kHz
100 Hr Power Capacity[2]	300 Watts Continuous Program Power 150 Watts Continuous Pink Noise
Maximum SPL @ 1m[3]	Short-Term: 118 dB; Long-Term: 112 dB
Nominal Sensitivity[4]	90 dB, 1W @ 1 m (3.3 ft)
Nominal Coverage Angle[5]	110° H x 85° V, rotatable
Directivity Factor (Q)	6.7, averaged 500 Hz to 16 kHz
Directivity Index (DI)	8.3 dB, averaged 500 Hz to 16 kHz
Nominal Impedance	8 ohms
Minimum Impedance	6.3 ohms @ 230 Hz 3.3 ohms @ 4.1 kHz
Crossover Type	3rd order high-pass, 2nd order low-pass with impedance compensation, 2.5 kHz crossover frequency
Transformer Taps	70V: 110W, 55W, 28W & 14W 100V: 110W, 55W, & 28W
Thru Position	8Ω nominal
Recommended High-Pass	See chart
Transducers	
Low Frequency	200 mm (8 in) kevlar cone with pure butyl rubber surround, 50 mm (2 in) voicecoil on fiberglass former
High Frequency	25 mm (1 in) compression driver, pure titanium diaphragm with patented JBL diamond surround
Physical	
Enclosure Material	High impact polystyrene
Grille	Thermoset composite coated steel
Overload Protection	Full-range power limiting to protect network and transducers. Serviceable internal fuse to protect during extreme overload conditions.
Environmental	IEC 529 IP-X4 splashproof rating. Exceeds MilSpec 810 for humidity, salt spray, temperature & UV. Passes Mil-Std-202F for salt spray.
Termination	Screw-down terminal strip, zinc plated copper base, nickel plated metal screws/washers. Accepts up to 9 mm outside 4 mm inside open lug (#6, #8 or #10 lug), plus bare wire (up to 12 AWG/2.5 mm²).
Safety Agency Rating	Transformer is listed per UL1876
Colors	Black or white (-WH)
Dimensions (H x W x D)	520 x 306 x 277 mm (20.5 x 12.0 x 10.9 in)
Net Weight (each)	12.2 kg (26.8 lb)
Shipping Weight (each)	14.0 kg (30.8 lb)
Included Accessories	» 1 pc MTC-PC2 input panel cover, InvisiBall mounting base, 6 mm x 260 mm InvisiBall Hex wrench
Optional Accessories	» MTC-29CM to install speaker down from the ceiling » MTC-29UB U-bracket

[1] In half-space.

[2] Continuous Pink Noise rating is IEC-shaped pink noise with a 6 dB crest factor for 100 hours continuously. Continuous program power is defined as 3 dB above the Continuous Pink Noise Rating and is a conservative expression of the system's ability to handle normal speech and music program material.

[3] Calculated from sensitivity and power handling. Power compression not considered.

[4] Half-space, averaged 100 Hz to 10 kHz 5 2 kHz to 14 kHz

[5] 2 kHz to 14 kHz

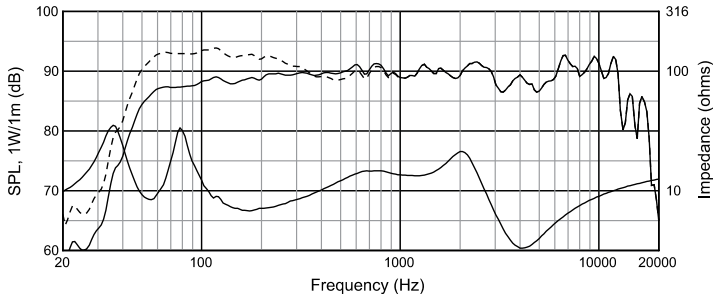
JBL continually engages in research related to product improvements. Changes introduced into existing products without notice are an expression of that philosophy.

SPECSHEET

Control® 29AV-1

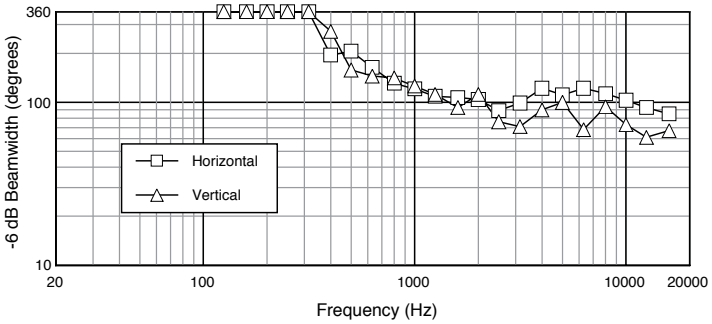
Professional Series – Premium Indoor/Outdoor Monitor Speaker

Frequency Response:



On axis in half-space (2pi, dotted line) and full-space (4pi, solid line) at thru (8 ohm) setting Input Impedance

Beamwidth vs. Frequency:

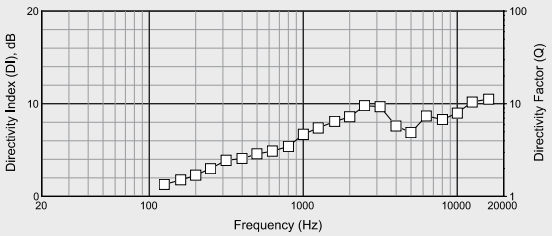


High-Pass Frequency Recommendations:

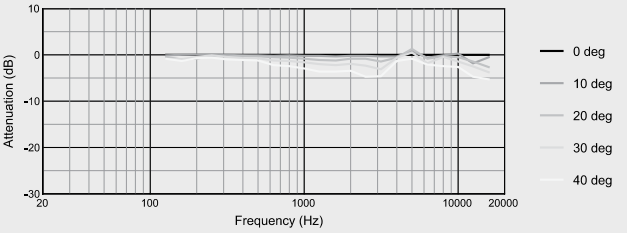
The line-matching transformer in the Control 29AV-1 has been designed to minimize saturation; however, it is recommended that the system be high-passed to prevent very low-frequency content from overloading the transformer and/or the driving amplifier at high signal levels. The high-pass requirements vary according to the tap settings and number of speakers connected in parallel. The following chart will eliminate risk of saturation, even at full-voltage (70V or 100V) peaks. Reducing the drive voltage will enable a corresponding reduction of high-pass frequency (24 dB/octave high-pass slope).

	1 or 2 speakers	3 or more speakers
14 Watt Tap	30 Hz	35 Hz
28 Watt Tap	35 Hz	40 Hz
55 Watt Tap	60 Hz	70 Hz
110 Watt Tap	80 Hz	90 Hz
8 Ohm Setting	No high-pass required	

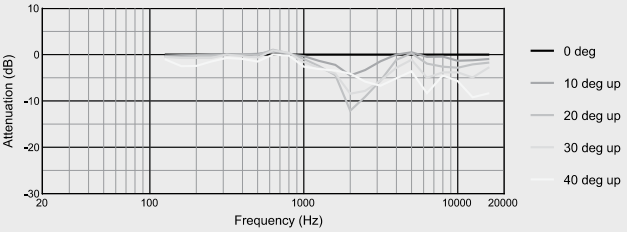
Directivity Index,Q:



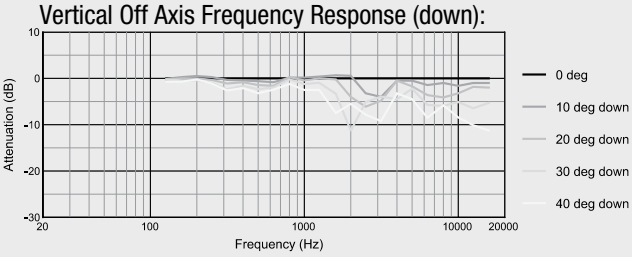
Horizontal Off Axis Frequency Response:



Vertical Off Axis Frequency Response (up):



Vertical Off Axis Frequency Response (down):



SPECSHEET

Control® 29AV-1

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Architectural Specifications:

The loudspeaker shall consist of a 200 mm (8 in) low frequency transducer, 25 mm (1 in) compression driver, and frequency dividing network. The low frequency driver's voice coil shall be 50 mm (2 in) in diameter.

Performance specifications of a typical unit shall be as follows: Usable frequency response shall extend from 37 Hz to 18 kHz (10 dB below rated sensitivity, half-space, no external equalization). Rated power shall be at least 300 watts continuous program power for 100 continuous hours duration (defined as 3 dB above a test signal of filtered random pink noise conforming to IEC268-5). Measured sensitivity shall be at least 90 dB-SPL (at 1 m [3.3 ft] with 2.83 V input, ave. 100 Hz to 10 kHz).

The input shall be switchable for use either at nominal 8 ohms, or on a 70.7V or 100V distributed speaker line via built-in transformer. Selectable taps shall nominally be 110W, 55W, or 28W on either a 70.7V or 100V distributed speaker line, plus 14W on 70.7V line only.

The system shall be protected against damage from occasional overpowering via full range limiting, which shall be inaudible during activation. The compression driver shall be horn-loaded to cover 110 degrees by 85 degrees with a high degree of accuracy and the horn shall be rotatable to achieve these coverages either in the horizontal or vertical planes, regardless of cabinet orientation.

The cabinet and grille shall be paintable. The grille shall be secured via screws to keep it in place when facing downward.

The low frequency transducer shall have woven kevlar cone and butyl rubber surround, with the frame protected from direct weather exposure. The compression driver shall be constructed with a titanium diaphragm for weather resistance. The system shall withstand Mil Spec 810 testing with specified durations with no effect on its acoustical performance or structural integrity: salt spray (method 509.3), temperature (method 501.3 and 502.3), humidity (method 507.3) and ultraviolet (method 505.3). Further, it shall pass Mil-Std-202F (method 101D) for salt spray. The system shall have an IEC 529 splash-proof rating of IP-X4.

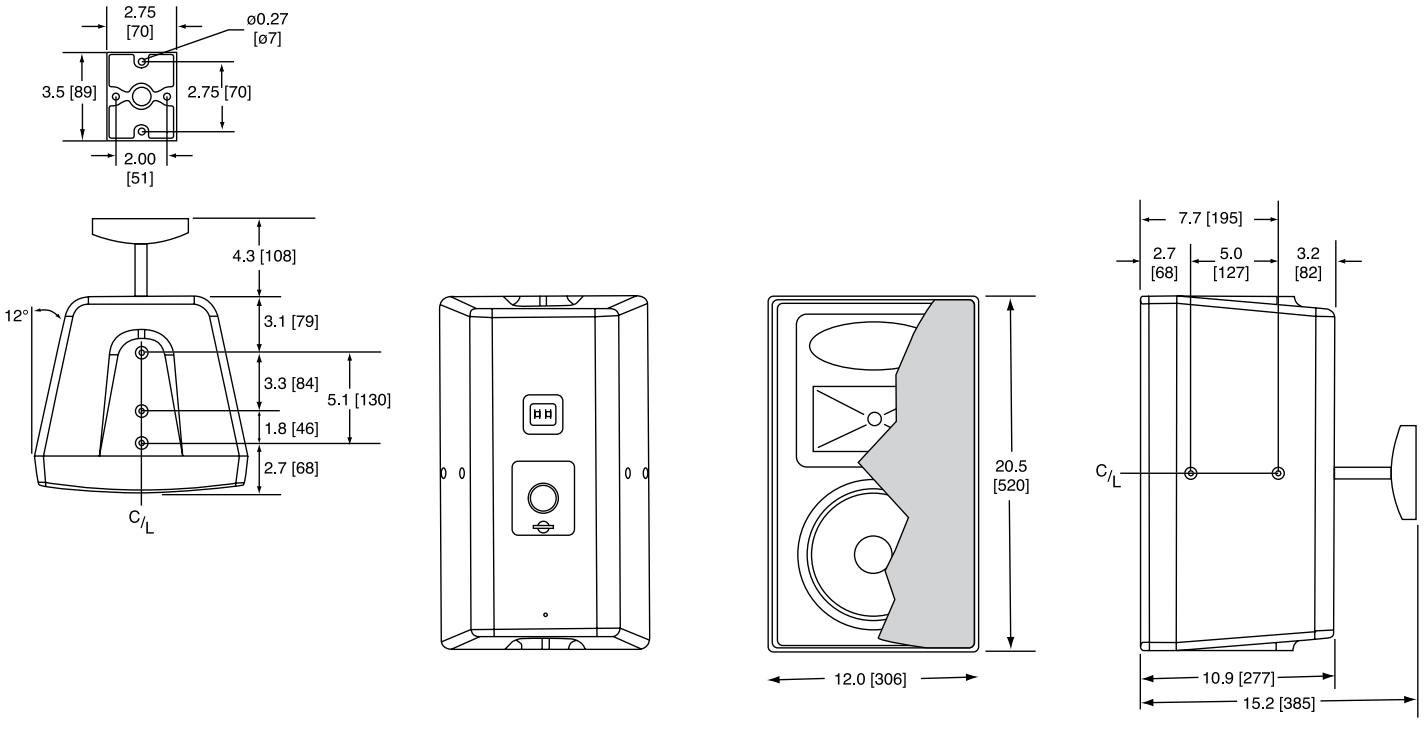
For theft-deterrence, the installation access area shall be hidden behind a snap-out cover on the front grille. The included ball mechanism shall be internal to the cabinet. The cabinet shall have ten (10) 6 mm mounting points, including 2 on each side and 3 on top and bottom and an accessory U-bracket shall be available. The grille logo shall be rotatable for proper orientation with loudspeaker mounted horizontally or vertically.

The external wiring connectors shall be screw-down terminals. Overall cabinet dimensions shall be no greater than 520 mm high x 306 mm wide x 277 mm deep (20.5 x 12.0 x 10.9 in) and shall weigh no more than 12.2 kg (26.8 lb). The finish shall be lightly textured black or white.

The system shall be the JBL Model C29AV-1 (or C29AV-WH-1) with included InvisiBall® (mounting system).

Mounting Dimensions:

Dimensions in inches (mm)

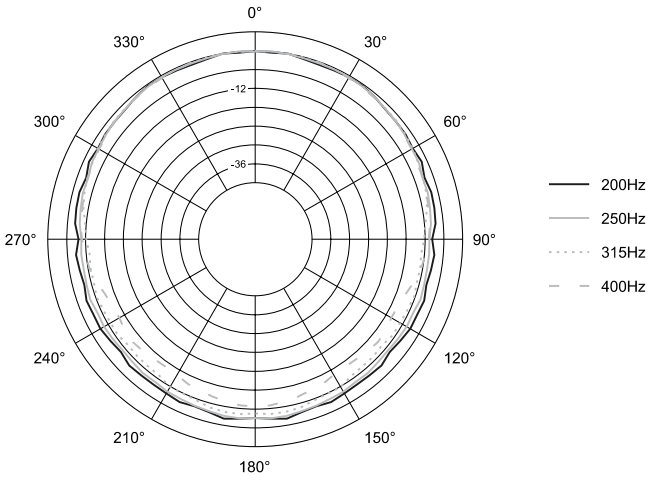


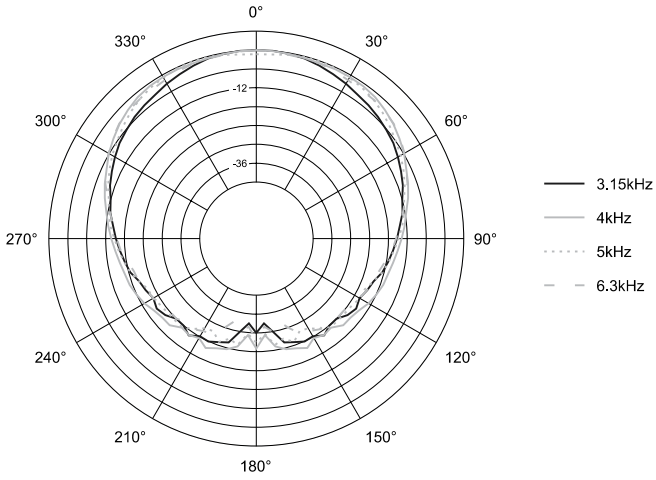
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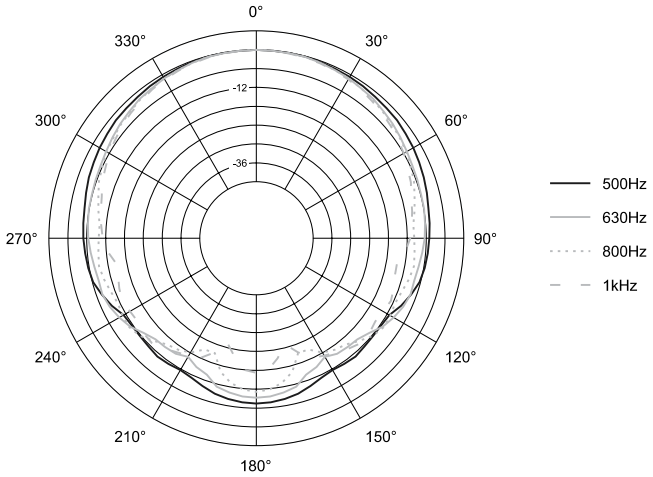
Control® 29 AV-1

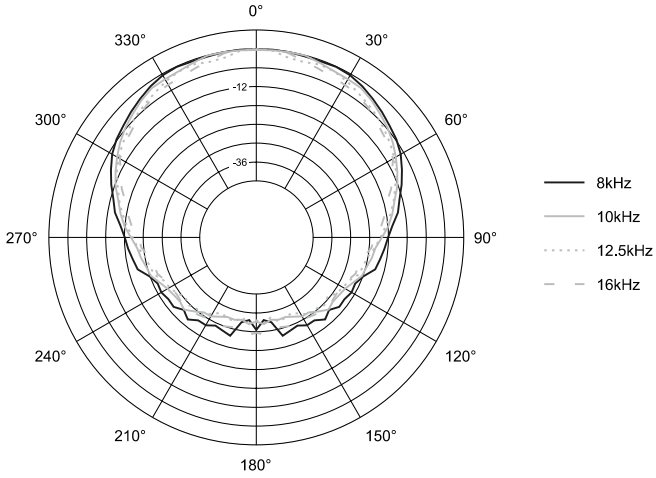
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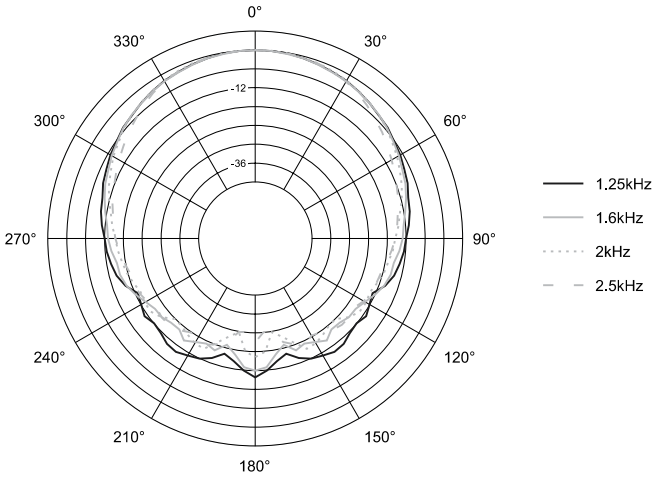
Horizontal 1/3 Octave Polars:









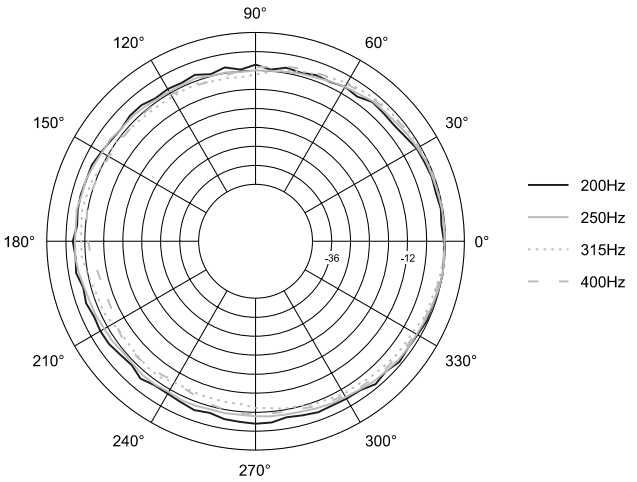


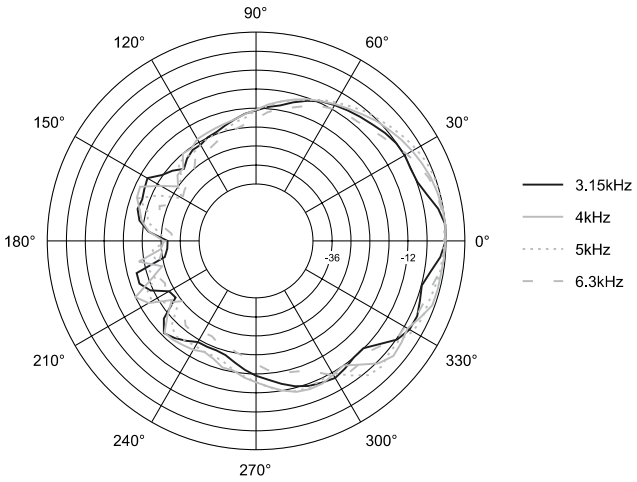
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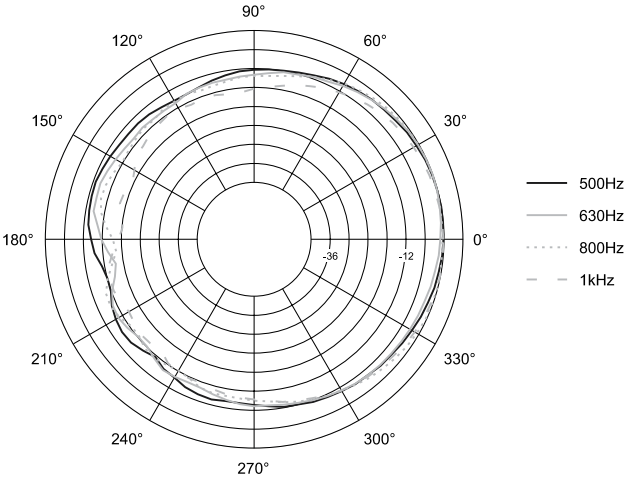
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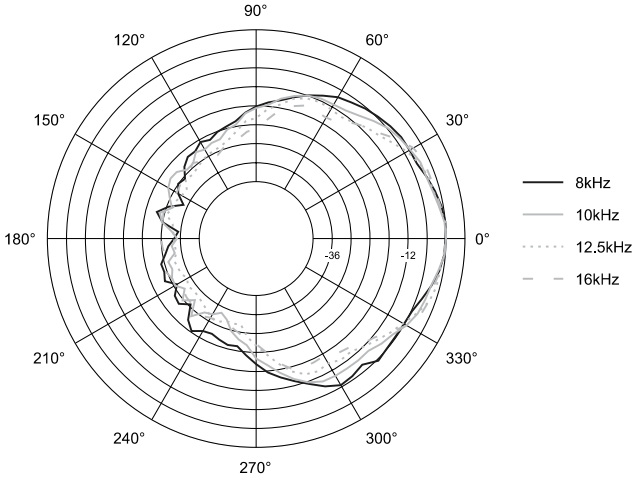
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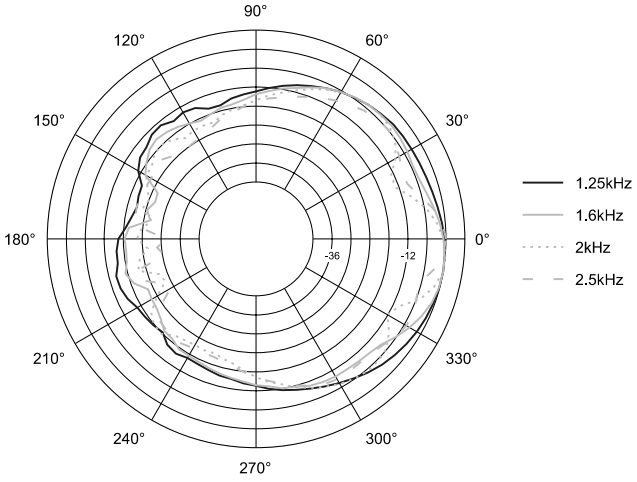
Vertical 1/3 Octave Polars:











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